

Amendments to the Drawings:

Formal drawings are submitted herewith which incorporate the changes required by the Examiner. Approval by the Examiner is respectfully requested.

Attachments: Replacement Figures 1-3

REMARKS

Claims 32-34 are rejected. Claims 1-31 are withdrawn from consideration. Claims 32 and 33 have been amended. Claims 1-34 are presently pending in the application. Favorable reconsideration of the application in view of the following remarks is respectfully requested.

The basis for the amendment to claims 32 and 33 is found on page 3, lines 17-20 and page 14, lines 22-23.

Rejection of Claims 32-34 Under 35 U.S.C. §103(a) Over Herkstroeter and Jones Over Chandler:

The Examiner has rejected Claims 32-34 under 35 U.S.C. §103(a) as being unpatentable over Herkstroeter et al. (Journal of American Chemical Society 97, (11) May 28th 1975) and Jones et al. (US Patent No. 6,489,511 B 1 dated Dec. 3, 2002) over Chandler et al. (US Patent No, 6,599,331 B2 dated July, 29th 2003).

Examiner's rejection:

The Examiner indicates that Herkstroeter et al. teaches azomethine dyes of formula (1) (See figure 9, page 3093) and that Jones et al. teaches azomethine dyes of formula (II) (See column 5, compounds D7 -D9). The Examiner states that Chandler et al. teaches microspheres containing dyes. The Examiner further states that the difference between the instant application and Herkstroeter et al. and Jones et al. is that Herkstroeter et al. and Jones et al. are silent about microspheres. The Examiner states that Chandler et al. is silent about the specific azomethine dyes of formula (1) and formula (II) as disclosed in the instant application. The Examiner indicates that it would have been obvious to one of ordinary skill in the art to combine and modify the methods cited above at the time of invention, and the ordinary artisan would have had a reasonable expectation of success of introducing azomethine dyes into capsule to make microsphere. The Examiner further indicates that one would have been motivated to make the microspheres containing a wide range of dyes, which may include azomethine dyes, based on the prior art available at the time that the instant invention was made.

In summary, the Examiner relies on Chandler et al. to teach microspheres containing dye and Herkstroeter et al. and Jones et al. to teach

azomethine dyes of formula (I) and (II). The Examiner states that the ordinary artisan would have had a reasonable expectation of success and would be motivated to make microspheres containing a wide range of dyes. This rejection is respectfully urged as in error in light of the amendments.

Response to the Examiner's rejection:

Herkstroeter et al. teaches an indirect experimental technique to measure the triplet energy levels in azomethine dyes by measuring the rates of energy transfer.

Jones et al. relates to a process for forming an azomethine compound, comprising reacting a compound having an active methylene group or methine group with an arylprimaryamine compound in the presence of a base and an oxidizing agent and in a solvent medium containing a ketone compound having C1-C4 alkyl groups at a temperature low enough to provide a yield of the azomethine product of at least 50 mole %.

Chandler et al. relates to multicolored, fluorescently stained small particles and making a series of bead or microsphere or particle populations characterized by subtle variation in a proportion or ratio of at least two fluorescent dyes distributed within a single bead of each population is provided. These beads, when excited by a single excitation light source are capable of giving off several fluorescent signals simultaneously. A set containing as many as 64 distinct populations of multicolored, fluorescent beads is provided and when combined with analytical reagents bound to the surface of such beads is extremely useful for multiplexed analysis of a plurality of analytes in a single sample.

The present invention relates to a microsphere for making an array, the microsphere comprising a capsule containing a dye. The microsphere does not substantially fluoresce when excited by visible light.

To establish a *prima facia* case of obviousness, there must be some suggestion or motivation in the reference or in the general knowledge available to one skilled in the art to modify the reference, there must be a reasonable expectation of success, and the prior art reference must teach or suggest all the claim limitations.

The instant invention relates to low fluorescing microspheres, none of Herkstroeter et al., Jones et al. or Chandler et al. teach or suggest low fluorescing microspheres as claimed by the instant invention as amended.

Throughout Chandler et al. and particularly in Column 3, lines 40-42 and claim 1, Chandler et al. teaches microspheres comprising two distinct fluorescent dyes. The reference discloses measuring the fluorescent intensity of at least two distinct fluorescent dyes for multiparameter analysis. Chandler et al. teaches away from utilizing a low fluorescing dye and instead requires microspheres containing fluorescent dyes.

Both Herkstroeter et al. and Jones et al. disclose a broad range of azomethine compounds. However, neither reference teaches a microsphere containing a dye of formula (I) or (II) that does not substantially fluoresce when excited by visible light as claimed by the instant invention. As disclosed in the specification on page 5, lines 28-30, there are no general guideline parameters with which a colorant scientist may predict the fluorescence of any given colorant material. Therefore, the colorant scientist must undertake an empirical approach to the discovery of colorant materials that are low fluorescing. The claimed invention and the prior art must each be viewed “as a whole.” *In re Langer*, 465 F.2d 896 (CCPA 1972). The references disclose a broad range of suitable compounds. The instant invention is limited to compounds that exhibit low fluorescence. The references fail to teach or suggest any benefits associated with low fluorescing compounds as claimed by the instant invention.

Furthermore, the present invention provides surprising results, as dye materials containing a specific halogen functionality are particularly likely to possess the property of very low fluorescence. A number of azomethine compounds are known to exhibit high fluorescence. Applicants direct the Examiner’s attention to the following examples: Bruckner et al. (US Patent No. 5,562,763) Column 3, lines 62-65 discloses azomethine fluorescent yellow, a fluorescent pigment particle; Bremser et al. (US Patent No. 7,001,975) Column 20, lines 45-46 discloses bis(azomethine) pigments as examples of fluorescent pigments. As indicated on Page 19, Table I of the specification, the presently claimed dyes of formula (I) and (II) are low fluorescing, when compared to other, similar dyes.

Combining Chandler et al. with a low fluorescing dye renders Chandler et al. inoperable for its intended purpose. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed

modification.' *In re Gordon*, 733 F.2d 900, 221 (Fed. Cir. 1984). Chandler et al. relies on fluorescent dyes that emit a distinct fluorescence signal. Combining the microspheres as taught by Chandler et al. with a low fluorescing dye would render Chandler et al. inoperable, therefore combination is improper.

Additionally, the references comprise non-analogous art. Chandler et al. relates to fluorescent beads and does not relate to low fluorescing, dye filled microspheres of formula (I) or (II). Jones et al. relates to forming an azomethine compound and does not relate to low fluorescing dyes or microspheres.

Herkstroeter et al. relates to determining the triplet-energy levels in azomethine dyes and does not relate to low fluorescing, dye filled microspheres. There is no motivation disclosed within the references to suggest combination as the references fail to teach any problems associated with fluorescent microspheres. In fact, Chandler et al. teaches beneficial results utilizing fluorescent compounds. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000). The references fail to disclose any benefits associated with low fluorescing microspheres, and therefore, fail to provide any motivation to arrive at the instant invention.

Conclusion:

The references fail to render the instant invention obvious. First, Chandler et al. teaches away from utilizing a low fluorescing dye in a microsphere. Second, Herkstroeter et al. and Jones et al. disclose a broad range of suitable compounds and fail to disclose any benefits associated with specific low fluorescing dyes. Third, the instant invention provides surprising results. There are no general guideline parameters with which a colorant scientist may predict the fluorescence of any given colorant material. Therefore, the colorant scientist must undertake an empirical approach to the discovery of colorant materials that are low fluorescing. Fourth, modifying Chandler et al. with a low fluorescing dye would render Chandler et al. unsatisfactory for its intended purpose. Fifth, the

references comprise non-analogous art and provide no motivation to combine. Therefore, for at least one of these reasons, it is respectfully requested that the rejection be reconsidered and withdrawn.

It is believed that the foregoing is a complete response to the Office Action and that the claims are in condition for allowance. Favorable reconsideration and early passage to issue is therefore earnestly solicited.

Respectfully submitted,



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Enclosures: Replacement Figures 1-3
Copies of Formal Drawings

If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.